

XII. NOTES ON NEW AND RARE FISHES OF THE FAUNA OF JAPAN

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(PLATE XXXIV)

The junior author, devoting the academic year on sabbatical leave at Stanford University, brought with him from the Imperial University of Tokyo a few rare species of fishes, which are described and figured in the present paper. The types of all these are placed in the Carnegie Museum in Pittsburgh.

Family SERRANIDÆ

SUBFAMILY ANTHIINÆ

ENTONANTHIAS¹ Jordan and Tanaka, gen. nov.

(Type *Entonanthias pascalus* Jordan and Tanaka)

This genus, *Entonanthias*, belongs to the *Anthias*-group of the *Serranidæ*, which have the lateral line running high, the scales large, the fins tending to become filamentous, and the maxillary scaled. The genus is especially characterized by its enlarged, movable, upper lip, suggesting the snout of a pig; the dorsal spines short and slender; the form rather elongate; the mouth with strong canines; the base of the lower jaw not elevated (not as in *Symphysanodon*).

Family SERRANIDÆ

1. *Entonanthias pascalus* Jordan and Tanaka, sp. nov.

(Pl. XXXIV, fig. 2.)

Head 3.63 in length without caudal; depth 3.44; eye 5 in head; bony interorbital space 3.75; snout 3.33; depth of caudal peduncle 2.16; maxillary 2; width of its distal extremity 6.67; pectoral (middle rays) 1.15; B. 7; D. X, 16; A. III, 7; P. 18; V. I, 5; C. (branched rays only) 13; pores in lateral line, 49.

Body rather elongate, strongly compressed; caudal peduncle rather deep, strongly compressed; dorsal outline slightly concave

¹The name is compounded from *ἐντόνος* = *wistful*, in allusion to the movable upper lip, and *ἀνθίας* (*Anthias*) a genus of fishes erected by Bloch and Schneider.

from snout to nape, thence nearly straight to origin of soft dorsal, finally very gently curved to base of caudal; lower outline evenly and broadly curved, the ventral curve a little stronger than the dorsal. Head rather small; pointed, with a concavity over eye; eyes lateral, high up on anterior half of head; eye-lid but little developed, its posterior half with lobed fringes; interorbital rather broad, strongly convex; snout pointed, longer than interorbital width or eye; nostrils directly in front of eye, the anterior small, with elevated rim, the posterior much larger, without elevated rim; maxillary exposed, without supplemental bone, scarcely reaching beneath posterior rim of eye, the posterior margin broadly rounded. Mouth subinferior, oblique, overhung by anterior part of upper lip, which is developed much more than the rest of the lip and seems to be movable at will, its form more or less suggesting the snout of a pig. Lower jaw much the shorter; jaws with narrow bands of pointed teeth, outer ones larger; a large canine directed forward behind protruding upper lip; a similar tooth in lower jaw a little behind the corresponding upper one; another much larger canine curved backward a little before middle of outer row of lower teeth; narrow bands of teeth on vomer and palatines; base of lower jaw not elevated. Tongue pointed, smooth. Preopercle with finely serrated vertical limb, the serræ gradually increasing in strength downward, three serræ at the broadly rounded angle a little stronger, the lower limb almost smooth, without antrorse teeth. Opercle with two small flattish spines, the lower much smaller and easily overlooked. Gill-openings as usual in similar fishes; the membranes separate, free from the isthmus; gills four, a large slit behind the last; pseudobranchiæ well developed; gill-rakers on first gill-arch $9 + 21$, long, pointed, the longest about equal to length of eye. Dorsal inserted over base of pectoral, the spines short, very slender, stiff, sixth and seventh longest, a little less than twice eye; spinous part continuous with the soft part, without notch; posterior rays somewhat filamentous, about equal to length of head, scarcely reaching to caudal base. Anal inserted below seventh ray of soft dorsal, similar in form to the latter, ending more anteriorly than soft dorsal when folded back. Pectoral low, subsymmetrical in form, with broadly rounded posterior margin, not quite reaching vent. Ventral inserted behind lower base of pectoral, its second ray filamentous, reaching beyond vent. A scaly flap at the axils of pectoral and ventral. Vent directly in front of anal. Caudal over centre, not deeply forked, its lobes somewhat filamentous. Scales moderate in size, ciliated, smooth on the border. Head, including maxillary, closely scaled, except on chin, lips, and a small area at tip of snout. A slight scaly sheath on the base of dorsal and anal fins. Lateral line complete, concurrent with back, bending gently below posterior rays of dorsal, each tube with an ascending tubule, extending along nearly the entire scale.

Color in formalin, light reddish brown, much lighter below; no evident markings; in life the fish was probably bright red.

Described and figured from the type, 147 mm. long, found in the market of Naha, Okinawa (C.M.Cat. Fishes, No. 8327a). The paratype is No. 23,680, Stanford University Museum.

The species is rather common around the coast of Okinawa in the Riukiu Archipelago. It resembles *Leptanthias kashiwa* Tanaka* from which it differs in having the lower border of preopercle smooth, the pectoral longer, the soft dorsal and anal filamentous, the caudal crescentic, but especially in having the anterior part of upper lip very thick, prominent, and movable.

Family POMACENTRIDÆ

Chromis Cuvier

(Subgenus *Ayresia* Cooper)

2. *Chromis villadolidi* Jordan and Tanaka, sp. nov.

(Plate XXXIV, fig. 1.)

Head 3.43 (3.1 to 3.52) in length without caudal; depth 2.51 (2.32 to 2.55); eye, 2.73 (to 3.5) in head; interorbital 3 (2.9 to 3.33); snout 3.53 (to 4.15); depth of caudal peduncle 2.16 (2.13 to 2.46); maxillary 3 (2.9 to 3.33). B. 5; D. XIII, 13; A. II, 11; P. 19 (sometimes 18); V. I, 5; C. 13 (sometimes 12); scales 30 (sometimes 29); pores 18 (17 to 19).

Body oblong, compressed, back not elevated; upper and lower contours subequal, the latter more even; upper contour rising steeply from tip of snout, then in a straight line with strong angle in front of eye, next bending with weak angle at nape, whence backward it runs in a nearly straight line to posterior rays of dorsal; caudal peduncle strongly compressed. Head shortish; eye large, lateral high, posterior margin of pupil almost at middle of length of head; interorbital strongly convex, its width about equal to eye; snout shortish; nostril one on either side directly in front of eye; preorbital very low, margin entire; maxillary reaching below front of eye, sheathed by preorbital, except for small posterior part. Mouth oblique, jaws subequal, with conical teeth arranged in about four rows, the outer ones being larger; vomer and palatines toothless. Preopercle with a short flattish spine. Gill-openings wide, continued forward below, the membranes narrowly united, free from the isthmus, pseudo-branchiæ well developed; gill-rakers on first arch 10 + 22, slender, compressed, pointed, the longest half of eye. Dorsal inserted over base of pectoral, the spines rather slender, stiff, fourth to eighth

*Figs. & Desc. Fishes of Japan, etc., 1918, p. 525, fig. 387.

longest, much shorter than longest rays of soft portion, each half the length of head; margin of soft portion rather acutely pointed, the middle rays abruptly lengthened, these, when depressed, barely reaching base of caudal. Anal inserted below penultimate spine of dorsal, second spine much longer than first, in which it is contained 2 to 4 times, 1.58 times in head; margin of soft portion similar to that of soft dorsal, not extending as far as the latter fin when depressed. Pectoral obliquely truncate, the uppermost rays longest, reaching vertical through vent. Ventral inserted slightly behind lower base of pectoral; first ray a little filamentous, extending a trifle beyond vent. Caudal deeply forked, the lobes sharp, the upper slightly longer, the middle rays half the outer. Scales large, ctenoid; head closely scaled, except the tip of snout, lips, gill-membranes, and chin, which are without scales. Lateral line high, abruptly ceasing below fourth soft ray of dorsal; lower lateral line commencing below last rays of dorsal, having ten scales.

Color in formalin plain yellowish brown, lighter below; both dorsal and anal dark brown, except posterior parts of their soft portions, which are decidedly lighter; pectoral dusky, with a broad light patch near base, the base itself blackish both outside and inside, the blotch inside much darker and broader; ventral light dusky, distal parts blackish, except spine and first ray; caudal dark, posterior margin narrowly blackish, outer margin of both lobes blackish, leaving a small area at tip pale.

The species is very closely allied to *Chromis xanthochir* (Bleeker), from the East Indies, but judging from the description (Nat. Verh. Holl. Maatsch. Wetensch., 3rd Series, II, p. 158, 1877) and the figure (Bleeker, Atlas Ichthyologique, pl. CCCCII, Pomac., pl. III, fig. 5), it differs from the latter in having a very distinct patch at base of pectoral as well as at its axil; caudal lobes with much narrower dark band, and the ventrals with dark inner parts, leaving outer parts narrowly pale.

We have five specimens 125 to 135 mm. long, collected in the Sea of Japan between Tsushima and Fukuoka, Kiusiu, one, 134 mm. long, being taken as type (C.M. Cat. Fishes, No. 8328a). A paratype, No. 23681 is in the Stanford University Museum.

The species, a food-fish of low value, is salted and dried in the regions where it occurs. It is locally called "Kazakiri" or "Yahazu" and is not abundant.

The species is named for Deogracias V. Villadolid, a research student from the Philippines, who with the junior author is working on the fishes of the Pacific at Stanford University.

Family HEXAGRAMMIDÆ

STELLISTIUS² Jordan and Tanaka, gen. nov.(Type: *Stellistius katsukii* Jordan and Tanaka)

This genus is nearly related to *Pleurogrammus* Gill, having, as in that genus, the dorsal fin continuous, but with the central part of the fin not elevated and none of the other dorsal spines quite as high as the first, the edge of the fin being nearly straight. In the two species of *Pleurogrammus* (*monopterygius* and *azonus*) the first two or three spines are shortened, and the spines about the middle of the fin much elevated.

A single species is known from the Hokkaido.

3. *Stellistius katsukii* Jordan and Tanaka, sp. nov.

(Plate XXXIV, fig. 3.)

Head 4.31 in length without caudal; depth 5.44; eye 4.5 in head; interocular width 3.27; snout 3.13; maxillary 3.27; width of its distal extremity 2.67 in eye; depth of caudal peduncle 4 in head; pectoral (middle rays) 1.64 to 1.80; ventral 2.19 to 2.57; B. 7; D. XX, 26; A. II, 27; P. 23; V. I, 5; C. 13 (branched rays only); scales in lateral line about 225; pores about 150.

Body rather elongate, slightly compressed throughout; upper outline evenly curved, tapering from head to base of caudal fin; lower outline nearly straight. Head rather small, pointed, with evenly curved profile; eye moderate, directed slightly upward, its posterior margin at middle of head; interocular space broad and convex; snout rather long, pointed, with steep and evenly curved profile, much longer than eye, its length slightly more than interocular width; nostrils small, the anterior circular, without elevated rim, the posterior oblong, with a slight rim; maxillary exposed posteriorly, reaching just beyond anterior rim of eye, the width of its distal extremity contained 2.67 times in eye. Caudal peduncle short, 3 in head. Mouth oblique, with lateral cleft; jaws subequal, lower jaw very slightly the longer, both jaws with similar dentition; teeth small, pointed, one-rowed laterally, in narrow bands anteriorly, outer series much larger; vomerine teeth small; palatines almost without teeth; tongue smooth, with broadly rounded tip. Preopercle with edges entire and broadly rounded at angle. Opercle without spines, with smooth margin. Gill-openings large, continued forward for a short distance below, the membranes broadly united, free from the isthmus; gills 4, a slit behind the last; pseudo-branchiæ obsolete; gill-rakers on first arch 6 + 16, small, pointed. Dorsal fins continuous, rather low,

² στέλλω = to trim; ἱστίον = sail.

originating over posterior edge of opercle, the spines and rays so slender that the differences between them can scarcely be made out, the difference in height very slight, the first spine a trifle higher than any of the others; the spinous part not specially elevated. Anal inserted considerably before middle of base of dorsal, the two spines well differentiated from the soft rays. Pectoral low, short, with very broadly rounded margin, lower rays diminishing in length more abruptly than the upper; lower twelve or thirteen rays a little fleshy. Ventral inserted behind base of pectoral, rather short, reaching a short distance beyond the tip of pectoral. Vent directly in front of anal. Caudal deeply emarginate, its lobes pointed. Scales small, ctenoid, rough to the touch; head, including cheeks and upper part of preopercle and opercle, scaled; anterior half of snout, preorbital, suborbital, chin, and lower half of preopercle and of opercle, entirely naked. Lateral lines 5 in number; the first on sixth scale from base of dorsal fin, continuous, converging with its fellow behind the fin, leaving only two scales between the two; the second line runs along the fourteenth scale below the first line and is continuous, concurrent with back on the upper part of body, bending rather abruptly downward beneath last ray of dorsal and running through the middle of caudal peduncle; the third line begins a little before tip of pectoral, on lower side of body, and divides into two behind the fin, the upper branch ending a little behind anal fin, the lower branch taking a short course parallel to the upper ends over vent (the thin line on the right side does not send off any branch, and ends a little before last ray of anal); the fourth line begins a short distance behind branchiostegals on anterior part of throat, runs through outer side of base of ventral, approaches the fifth line over vent, ending above origin of anal (that on the right side unites with fifth over vent); the fifth line begins on the isthmus and runs along median line of throat, uniting with the fellow of opposite side a little behind base of ventral, then continues to caudal base, sending off a short upper branch directly before last ray of anal (the line on the right sends off no branch).

Color in formalin light brown, whitish below; with irregularly formed dark blotches broader than interspaces closely spread over body and head, leaving the ground-color more or less vermiculated; dorsal mostly dark brown, much lighter at base and in free margin; anal, ventral, and lower part of pectoral pale; caudal and upper part of pectoral dark.

A single specimen, 179 mm. long, was collected off Mororan, Hokkaido, by Mr. J. Katsuki. Mr. Katsuki states that the species is very rare. In recognition of his experience as a collector, the species is named for him.

This form, having a continuous dorsal, is allied to *Pleurogrammus*

monopterygius (Pallas) and to *Pleurogrammus azonus* Jordan and Metz. It differs from both in the much lower dorsal with feebler spines, the anterior spines being slightly the highest, and none of the median spines being elevated. It differs further in the course of the lower lateral lines; in the slenderer body; the smaller mouth; and in having the scales smaller. Although these differences might not be individually regarded as of primary importance, no one of them justifying separation generically from *Pleurogrammus*, their combination has led us to feel that we are justified in setting off this species into a separate genus, which we have accordingly done.

The type of *Stellistius katsukii*, which is also the type of the genus *Stellistius*, is in the Carnegie Museum, Cat. of Fishes, No. 8329a.

Family AMMODYTIDÆ

Genus HYPOPTYCHUS Steindachner

4. *Hypoptychus dybowskii* Steindachner.

Hypoptychus dybowskii STEINDACHNER, Ichth. Beitr., IX, 1880, p. 257, pl. II, fig. 3, Strielok, Japan Sea; SCHMIDT, Pisc. Mar. Orient., 1904, p. 210, Bays of Patioke, Manka, Aneva, Korsakou, most of these in Saghalin.

Head 4.2 to 4.62 in length without caudal; depth 7.69 to 9; eye 3.5 to 4 in head; interorbital 5 to 7; snout 3 to 3.2; depth of caudal peduncle 6.4. to 8; maxillary 3.5 to 4; D. 17 to 19; A, 19 to 21; P, 9 or 10.

The male differs from the female in the following points: Body slenderer and darker owing to much punctulation; anterior parts of dorsal and of anal and lower part of branchiostegal membranes blackish; these regions all plain in female; chin much darker.

Of this species we have five specimens, 72 to 82 mm. long, from near Mororan, Hokkaido. These agree quite well with the original description and figure given by Steindachner in 1880. Specimens were not received by the Carnegie Museum.

Family MASTACEMBELIDÆ

Genus BDELLORHYNCHUS Jordan and Tanaka, gen. nov.

(Genotype: *Mastacembelus maculatus* Reinwardt)

5. *Bdellorhynchus maculatus* (Reinwardt).

Mastacembelus maculatus (REINWARDT) Cuvier and Valenciennes, Hist. Nat Poiss., VIII, 1831, p. 461, Molucca.

Rhynchobdella sinensis BLEEKER, Vers. Akad. Amsterdam, (2), IV, 1870, p. 269, China in rivers.

Mastacembelus fasciatus BLEEKER, Ned. Tijdschr. Dierk., IV, 1873, p. 154, China.
Mastacembelus sinensis GÜNTHER, Ann. Mag. Nat. Hist., (4), XII, 1873, p. 243, Shanghai, China.

Maxillary reaching a little beyond front of eye in most specimens, just to the eye in two specimens from Formosa. Body light brown, with about thirty-five broad dark brown cross-bands, the number and breadth of the bands being very variable. Some specimens from Formosa are very plain and have no bands, agreeing well with the figure of *Rhynchobdella sinensis* Bleeker (1870). Dorsal and caudal finely reticulated, but in some specimens the pattern very obscure, turning to uniform brown color; anal nearly plain brown, with very obscure patterns and with narrow whitish edge.

The species occurs in the fresh waters of Biliton, Java, Sumatra, Molucca, China, and Formosa. We have many specimens from near Peking, China, and from about Taihoku, Formosa, averaging 230 mm. in length.

From the typical species of *Mastacembelus*, this species differs in the absence of the spines on the preopercle, characteristic of that group, and found in the type *Mastacembelus simack* Walbaum = *Mastacembelus alleppensis* Cuvier. Carn. Mus. Cat. Fishes, No 8330a. Specimen 190 mm. long, labeled "China."

EXPLANATION OF PLATE XXXIV.

Fig. 1. *Chromis villadolidi* Jordan and Tanaka, sp. nov.

Fig. 2. *Entonanthias pascalus* Jordan and Tanaka, sp. nov.

Fig. 3. *Stellistius katsukii* Jordan and Tanaka, sp. nov.